AMENDMENTS

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings of claims in the application:

In The Claims:

1. (Currently Amended) A method for producing an avian cell ~~lines, wherein it comprises the following steps~~ line, comprising:

a) culturing avian cells in a medium ~~containing all the factors allowing their growth and~~ having serum and growth factors, the medium further comprising an inactivated feeder layer[,];

b) ~~passage by~~ modifying the ~~culture~~ medium ~~so as to obtain progressive or total~~ by withdrawal of ~~said~~ factors, of ~~the~~ serum and/or of the feeder layer[,]; and

c) ~~establishing~~isolating adherent or nonadherent cell lines capable of proliferating in a basal medium in the absence of ~~exogenous~~ at least one of growth factors, serum and ~~/or~~ inactivated feeder layer.

2. (Currently Amended) The method of ~~according to~~ claim 1, wherein ~~the~~ cells ~~derived from~~ of the cell lines obtained in step c) ~~are capable of proliferating~~ can proliferate for at least 50 ~~days, preferably at least 600~~ days.

3. (Currently Amended) The method ~~according to~~ of claim 1, wherein step b) comprises ~~consists in~~ a progressive or total withdrawal of the feeder layer.~~, optionally followed by a progressive withdrawal of the growth factors and /or the serum~~.

4. (Currently Amended) The method ~~according to~~ of claim 1, wherein step b) ~~consists in~~ comprises a progressive or total withdrawal of the growth factors~~, optionally followed by~~ a ~~progressive withdrawal of the serum~~.

5. (Currently Amended) The method ~~according to~~ of claim 1, wherein step b) ~~consists in~~ comprises a progressive or total withdrawal of ~~the~~ at least one of growth factors and ~~/or~~ serum, optionally followed by ~~a~~ withdrawal of the feeder layer.

6. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells obtained in step c) are further subjected to a selection ~~in~~ step using culture media ~~used~~ for large-scale production ~~so as to obtain~~, thereby obtaining clones suitable for ~~the~~ vaccine production ~~of vaccine intended for human or animal therapy~~.

7. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells derived from the lines obtained in step c) are avian stem cells.

8. (Currently Amended) The method ~~according to claims~~ of claim 7, wherein the cells derived from the lines obtained in step c) are avian embryonic stem cells.

9. (Currently Amended) The method ~~according to~~ of claim 7, wherein the cells derived from the lines obtained in step c) are avian somatic stem cells.

10. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells derived from the lines obtained in step c) are adherent stem cells ~~which~~ that proliferate in the absence of the inactivated feeder layer.

11. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells derived from the lines obtained in step c) are nonadherent stem cells ~~which~~ that proliferate in suspension in a medium free of exogenous growth factors.

12. (Currently Amended) The method ~~according to~~ of claim 9, wherein the avian somatic stem cells are nonadherent cells ~~which~~ that proliferate in suspension in a medium free of exogenous growth factors.

13. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells derived from the lines obtained in step c) proliferate in a ~~medium~~ serum free ~~of serum~~ medium.

14. (Currently Amended) The method ~~according to~~ of claim 9, wherein the avian somatic stem cells are nonadherent cells ~~which~~ that proliferate in suspension in a ~~medium~~ serum free ~~of serum~~ medium.

15. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells derived from the lines obtained in step c) have at least one ~~of the following characteristics~~ characteristic selected from the group consisting of: a high nucleocytoplasmic ratio[,]; an endogenous alkaline phosphatase activity[,]; an endogenous telomerase activity[,]; and a reactivity

with specific antibodies selected from the group of antibodies SSEA-1 (TEC01) antibodies, SSEA-~~3,~~ 3 antibodies, and EMA-~~1~~.1 antibodies.

16. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells derived from the lines obtained in step c) are ~~modified in order to allow a better use in vitro such as the extension of the greater life span or growth densities or alternatively of the~~ further modified to exhibit at least one of: an extended life span; an increased growth density; and a lower nutrient ~~requirements~~ requirement.

17. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells derived from the lines obtained in step c) are further modified ~~in order~~ to produce ~~a substance of interest, in particular~~ at least one of: a polypeptide ~~of interest,~~ ; an antibody ~~or~~ ; and an attenuated virus.

18. (Currently Amended) The method ~~according to~~ of claim 1, wherein the medium used in step a) comprises at least one factor selected from ~~cytokines, in particular~~ the group consisting of a cytokine, LIF, IL-11, IL-6, IL-6R, CNTF, Oncostatin ~~and other factors such as~~ , SCF, IGF-1 and bFGF.

19. (Currently Amended) The method ~~according to~~ of claim 1, wherein the inactivated feeder layer used in step a) ~~is composed of fibroblast cells including mouse fibroblasts established as a line, in particular transformed or nontransformed~~ comprises STO cells.

20. (Currently Amended) The method ~~according to~~ of claim 1, wherein the cells used in step a) are ~~cells~~ obtained by suspending cells ~~obtained~~ from blastodermal disks of fertilized eggs in a culture medium comprising at least one

cytokine, b-FGF, and SCF, ~~said~~ inoculating the suspended cells ~~being inoculated into~~ onto a layer of feeder cells, ~~incubated~~ incubating, and then ~~collected~~ collecting the cells.

21. (Currently Amended) The method ~~according to~~ of claim 1, wherein step b) comprises a progressive withdrawal of ~~each growth factor added to the medium in step a), in particular~~ a cytokine, b-FGF, and SCF, ~~comprising a~~ by repeated passage of the cells in a new medium free of ~~at least one of said factors and in repeating various successive passages~~ the respective factor until the medium is free of ~~all of said~~ the factors.

22. (Currently Amended) The method ~~according to~~ of claim 21, wherein step b) additionally comprises ~~the~~ withdrawal of the serum.

23. (Currently Amended) The method ~~according to~~ of claim 21, wherein step b) additionally comprises ~~the~~ withdrawal of the feeder layer.

24. (Currently Amended) The method ~~according to~~ of claim 1, wherein step b) comprises a progressive withdrawal of the serum, ~~comprising successive passages~~ by repeated passage of the cells in new media comprising decreased serum concentration ~~and in repeating various successive passages~~ until the medium is free of serum.

25. (Currently Amended) The method ~~according to~~ of claim 1, wherein step b) comprises ~~the~~ a gradual withdrawal of the feeder layer~~, said withdrawal being either progressive comprising successive passages in new media comprising decreased feeder cells number and in repeating various successive passages until the medium is free of feeder cells~~.

26. (Currently Amended) A cell line ~~and cell derived thereof which can be~~ obtained ~~from~~ by the method ~~according to~~ of claim 1, wherein ~~it is capable of proliferating~~ a cell from the cell line can proliferate for at least 50 days ~~, preferably at least 600 days~~ in a medium free of ~~exogenous~~ supplied growth factor.

27. (Currently Amended) A cell line ~~and cells derived thereof which can be~~ obtained ~~from~~ by the method ~~according to~~ of claim 1, wherein ~~it is capable of proliferating~~ a cell from the cell line can proliferate for at least 50 days~~, preferably at least 600 days~~ in a ~~medium depleted of~~ serum ~~and in particular~~ free ~~of serum~~ medium.

28. (Currently Amended) A cell line ~~and cells derived thereof which can be~~ obtained ~~from~~ by the method ~~according to~~ of claim 1, wherein ~~it is capable of proliferating~~ a cell from the cell line can proliferate for at least 50 ~~days, preferably at least 600~~ days in a medium free of feeder layer.

29. (Currently Amended) A cell line ~~and cells derived thereof which can be~~ obtained from the method ~~according to~~ of claim 1, wherein ~~it is capable of proliferating~~ a cell from the cell line can proliferate for at least 50 days~~, preferably at least 600 days~~ in a serum free medium that further is free of ~~exogenous~~ supplied growth factor ~~, depleted of serum or~~ and free ~~of serum and/or~~ of feeder layer.

30. (Currently Amended) A cell line ~~and cells derived thereof which can be~~ obtained from the method ~~according to~~ of claim 9, wherein ~~it is capable of proliferating~~ a cell from the cell line can proliferate for at least 50 days ~~, preferably at least 600 days~~ in a serum free medium that is free of

exogenous growth factor ~~, depleted of serum or~~ and free ~~of serum and/or~~ of feeder layer.

31. (Currently Amended) ~~The cell line and cells derived thereof according to claims 29 or 30, wherein it is capable of proliferating~~ A cell line as described in claim 29, wherein a cell from the cell line can proliferate for at least 50 days ~~, preferably at least 600 days~~ in a basal medium ~~, in particular in a medium such as~~ selected from the group consisting of DMEM, GMEM, HamF12 ~~or~~ and McCoy, wherein the basal medium is supplemented with ~~various additives such as~~ an additive selected from the group consisting of a nonessential amino ~~acids, vitamins~~ acid, a vitamin and sodium pyruvate.

32. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to~~ as described in claim 26, ~~wherein it is an~~ comprising avian stem ~~cell~~ cells.

33. (Currently Amended) ~~The~~ A cell line ~~and cell derived from such a line according to~~ as described in claim 32, wherein ~~it is an~~ the avian stem cells are avian embryonic stem ~~cell~~ cells.

34. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to~~ as described in claim 32, wherein ~~it is an~~ the avian stem cells are avian somatic stem ~~cell~~ cells.

35. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to~~ as described in claim 32, wherein ~~it is an~~ the avian stem cells are adherent stem ~~cell which proliferates~~ cells that proliferate in the absence of the inactivated feeder layer.

36. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to~~ as described in claim 32, wherein ~~it is a~~ the cells are nonadherent ~~stem cell which proliferates~~ cells that proliferate in suspension.

37. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to one of~~ as described in claim 32, wherein ~~it has at least one of~~ the cells exhibit a characteristic selected from the following ~~characteristics: ——~~ group: a high nucleocytoplasmic ratio ~~,——~~; an endogenous alkaline phosphatase activity ~~,——~~; an endogenous telomerase activity ~~,——~~; and a reactivity with a specific ~~antibodies~~ antibody selected from the group of ~~antibodies~~ SSEA-1 (TEC01) antibody, SSEA-~~3,~~3 antibody, and EMA-1 antibody.

38. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to one of claims~~ as described in claim 32, wherein ~~they~~ the cells are genetically modified ~~so as~~ to produce ~~a substance of interest, in particular~~ at least one of a polypeptide ~~of interest~~, an antibody ~~or~~ and an attenuated virus.

39. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to~~ as described in claim 38, wherein ~~they~~ the cells support the replication of ~~live or attenuated viruses, in particular the viruses selected from the group of adenoviruses, hepadnaviruses, herpesviruses, orthomyxoviruses, papovaviruses, paramyxoviruses, picornaviruses, poxviruses, reoviruses and retroviruses~~ a virus selected from the group consisting of an adenoviruse, a hepadnavirus, a herpesvirus, an orthomyxovirus, a papovavirus, a paramyxovirus, a picornavirus, a poxvirus, a reovirus and a retrovirus.

40. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to~~ as described in claim 39, wherein the ~~viruses replicated on these cells belong to the family of orthomyxoviruses, in particular the~~ virus is an influenza virus.

41. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to~~ as described in claim 39, wherein the ~~replicated viruses belong to the family of paramyxoviruses, in particular the~~ virus is selected from the group consisting of a paramyxovirus, a measles virus, a mumps virus and a rubella ~~viruses~~ virus.

42. (Currently Amended) ~~The~~ A cell line ~~and cells derived thereof according to~~ as described in claim 39, wherein the virus is selected from the group ~~of poxviruses such as~~ consisting of a poxvirus, an attenuated vaccinia virus ~~and in particular~~, an Avipox virus ~~such as~~ , a canarypox virus, a Fowlpox virus, a Juncopox virus, a Mynahpox virus, a Pigeonpox virus, a Psittacinepox virus, a Quailpox virus, a Sparrowpox virus, a Starlingpox virus and a Turkeypox virus.

43. (Currently Amended) A cell line produced by the method of ~~derived from step c) of the method according to one of claims~~ claim 1, wherein ~~it~~ a cell from the cell line is a genetically modified avian stem cell capable of growing indefinitely in a basal medium free of exogenous growth factors~~, depleted of serum and /or free of serum and/or of feeder layer~~.

44. (Presently Cancelled)

45. (Presently Cancelled)

46. (Currently Amended) A method ~~The use of the line according to claim 32~~ for the production of ~~viruses belonging to the family of~~ a virus, wherein the virus is selected from the group consisting of an orthomyxovirus~~es , in particular the~~ and an influenza virus, comprising culturing the cell line of claim 32.

47. (Currently Amended) A method ~~The use of the line according to claim 32~~ for the production of ~~viruses belonging to the family of paramyxoviruses, in particular the~~ a virus, comprising culturing the cell line of claim 32, wherein the virus is selected from the group consisting of a paramyxovirus, a measles virus, a mumps virus and a rubella ~~viruses~~ virus.

48. (Currently Amended) A method ~~The use of the line according to claim 39,~~ for the replication of a virus in a cell, ~~supporting the replication of live or attenuated viruses, in particular by~~ comprising introducing one or more ~~the~~ components ~~(s)~~ necessary for accomplishing the complete viral cycle of the virus in cells of the cell line described in claim 39 ~~the cell, in particular the overexpression of the~~ wherein the cells of the cell line over express a receptor for the virus at ~~the surface of the cell~~ their surfaces.

49. (Currently Amended) The method of claim 48, wherein ~~use according to claim 39, for supporting the replication of live or attenuated viruses, in particular by introducing the component(s) necessary for accomplishing the complete viral cycle of the virus in the cell, in particular the overexpression of the receptor for the virus at the surface of the cell, said viruses being~~ the virus is selected from the group ~~of poxviruses such as~~ consisting of a poxvirus, a vaccinia virus ~~(for example Modified~~, a modified vaccinia

virus Ankara~~,~~ MVA) ~~and in particular~~, an Avipox virus ~~such as~~, a canarypox virus, a Fowlpox virus, a Juncopox virus, a Mynahpox virus, a Pigeonpox virus, a Psittacinepox virus, a Quailpox virus, a Sparrowpox virus, a Starlingpox virus and a Turkeypox virus.

50. (Currently Amended) ~~The use according to~~ A method for producing a ~~claim 39 to produce a live or attenuated~~ vaccine, comprising culturing ~~the~~ adherent or non adherent ~~cell lines established in step c) according to the process described above~~ cells obtained from step c) of claim 1, inoculating said cells with viral particles and culturing said cells in a ~~basal~~ medium ~~as mentioned above~~ until cell lysis ~~occurs~~ and ~~newly produced~~ release of viral particles ~~are released in~~ into said medium.

51. (Currently Amended) The method of claim 50, ~~use according to claim 39 to produce live or attenuated, native or recombinant, vaccine~~ wherein the viral particles comprise a virus selected from the group consisting of ~~the family of adenoviruses (such as~~ an adenovirus, a Human Adenovirus C, a Fowl Adenovirus A, an Ovine Adenovirus D, a Turkey Adenovirus B~~)~~, a circoviridae ~~(such as~~, a Chicken Anemia Virus, (CAV), ~~coronaviruses, such as~~ a coronavirus, an avian infectious bronchitis virus (IBV), ~~flaviviruses (such as~~ a flavivirus, a Yellow fever virus ~~and~~, a hepatitis C virus~~)~~, a hepadnaviruses ~~(such as~~ , a Hepatitis B virus ~~and Avihepadnaviruses such as~~, an Avihepadnavirus, a Duck hepatitis B virus ~~); herpesviruses (such as~~, a herpesvirus, a Gallid herpesvirus, ~~HSV (~~a Herpes simplex virus ~~) and Human~~, a human herpesvirus 1, ~~3 and 5), orthomyxoviruses (such as the~~ a human herpesvirus 3, a humanherpesvirus 5, an orthomyxovirus, an influenza virus ~~÷~~ , Influenzavirus A, Influenzavirus B ~~and~~ ,Influenzavirus C ~~),~~ ~~papovaviruses (such as~~, a papovavirus, polyomavirus ~~and more~~

~~particularly~~, Simian virus ~~40), paramyxoviruses (such as~~ 40, a paramyxovirus, a measles virus, a mumps ~~and rubella viruses and such as respiroviruses and pneumoviruses such as~~ virus, a rubella virus, a respirovirus, a pneumovirus, a human respiratory syncytial virus ~~and~~, a Metapneumovirus ~~such as~~, an Avian pneumovirus ~~), picornaviruses (such as~~, a picornavirus, polio virus, hepatitis A virus, ~~and such as~~ Encephalomyocarditis virus ~~and~~, foot-and-mouth disease virus ~~), poxviruses (such as~~, a poxvirus, a fowlpox virus ~~and~~, an avipox ~~viruses including~~ virus, a Canarypox ~~viruses,~~ virus, a Juncopox ~~viruses,~~ virus, a Mynahpox ~~viruses,~~ virus, a Pigeonpox ~~viruses,~~ virus, a Psittacinepox ~~viruses,~~ virus, a Quailpox ~~viruses,~~ virus, a Sparrowpox ~~viruses,~~ virus, a Starlingpox ~~viruses,~~ virus, a Turkeypox ~~viruses,~~ virus, an orthopoxvirus ~~such as~~, vaccinia virus, MVA, ~~and reoviruses (such as rotaviruses),~~ a reovirus, a rotavirus, a retroviruses (~~such as~~, ALV, avian leukosis virus, ~~Gammaretroviruses such as~~ a Gammaretrovirus, Murine leukemia virus, ~~Lentiviruses such as Human~~ a Lentivirus, human immunodeficiency virus 1 ~~and 2) and~~ human immunodeficiency virus 2, a Togaviridae ~~such as~~, Rubivirus, ~~in particular~~ and a Rubella virus.

52. (Presently cancelled)

53. (Presently cancelled)

54. (New) The method of claim 3, further comprising the progressive withdrawal of growth factors, serum or both growth factors and serum.

55. (New) The method of claim 4, further comprising the progressive withdrawal of the serum.

56. (New) A method for producing a cell line as described in claim 1, wherein the avian cells are avian stem cells.

57. (New) A method for producing a therapeutic protein, comprising incubating cells of a cell line as described in claim 56 in a medium.

58. (New) A method for the replication of a virus, comprising culturing an avian cell line produced as described in claim one, wherein the avian cells comprise avian stem cells and the virus is selected from the group consisting of an adenovirus, a hepadnavirus, a herpesvirus, an orthomyxovirus, a papovavirus, a paramyxovirus, a picornavirus, a poxvirus, a vaccinia virus, an Avipox virus, a canarypox virus, a Fowlpox virus, a Juncopox virus, a Mynahpox virus, a Pigeonpox virus, a Psittacinepox virus, a Quailpox virus, a Sparrowpox virus, a Starlingpox virus, a Turkeypox virus, a reovirus and a retrovirus.

59. (New) The method of claim 58, wherein the virus is suitable for producing a vaccine against smallpox.

60. (New) The method of claim 58, wherein the virus is recombinant and has anti-cancer activity.